REMARKS

Applicants wish to thank the Examiner for the telephone interview conducted on 2/8/2006, where agreement was not reached with respect to the claims. The interview was conducted via telephone and attended by Examiner B.J. Foreman, Inventor John C. Chappell, and Applicants' representative William R. McCarthy III. The subject matter of the interview included an overview of the invention and its advantages provided by the Inventor, John Chappell. The subject matter also included a general discussion of the Examiner's point of view regarding the scope of certain claim limitations and the application of the prior art references given the Examiner's interpretation. In particular, the scope of the "optical fiber element operatively couples to an interface that aligns" limitations of the independent claims were discussed with respect to the rejections applied under 35 U.S.C. §102(a) and §103(a) and in particular the disclosure of Braun et al. (U.S. Patent Serial No. 6,819,843), and Oshida et al. (U.S. Patent Serial No. 5,302,999). During the discussion the Examiner helpfully identified some claim limitations that in the Examiners opinion could be amended to clarify the claim scope. Applicants would like to state that the interview was found to be very helpful in advancing the prosecution of the present application.

Upon entry of this amendment, claims 1-14, and 53-56 are pending, and of these claims 1, 5, and 53 are independent.

Applicants have amended claims 1, 5, and 53 to include the limitations of directing the light beam onto "an input end" of optical fiber elements, and "an output end of each optical fiber element is disposed in a well of an interface

element that mechanically aligns the output end of the optical fiber element with an area for synthesizing a probe feature on the substrate", the support for which may be found in paragraphs [0046], [0052]-[0053], [0056], and [0059]. Applicants have also amended claims 55 and 56 for consistency with the amendments to claim 53.

Applicants respectfully assert that identifying the input and an output end of the fibers provides clarity to the orientation of the fibers with respect to the light beam and substrate. Further, Applicants assert that identification of the optical fiber elements disposed in wells of an interface element that mechanically align the ends of the optical fibers clarifies the structural nature of the limitations as well as the relationship of the ends of the fibers with said structure. Therefore, each of the amendments have been made for the purpose of clarity and not to avoid prior art.

Applicants assert that no new matter is presented by these amendments and respectfully request entry of the same.

Reply to Claim Rejections – 35 U.S.C. §102

Claims 1-7, 13, and 53 are rejected under 35 U.S.C. §102(a) over Braun et al. (WO 00/69553 and its English Translation counterpart US 6,819,843).

As described above, Applicants have amended claims 1, 5, and 53 to provide clarity to the scope of each of the claims by including the limitations of "an output end of each optical fiber element is disposed in a well of an interface element that mechanically aligns the output end of the optical fiber element with

an area for synthesizing a probe feature on the substrate". Applicants respectfully assert that Braun et al. does not describe any structure that aligns the ends of optical fiber elements with an area on a substrate.

In particular, Applicants respectfully disagree with the Examiners assertion that Braun et al. "specifically teach alignment of fibers and substrate" using a "dynamic mask" (Examiner points to col. 3, lines 58-61; and col. 5, lines 35-47 of Braun et al. for support). Instead, Applicants respectfully assert that the dynamic mask described by Braun et al. is employed to control the transmissive state (i.e. transmitting light vs. not transmitting light) of optical fibers by blocking light from entering the input end of the fibers (referred to as "targeted light coupling" in Braun et al.). Applicants also respectfully assert that the masks have no described capability for aligning fibers with areas of the substrate.

For example, col. 3, lines 58-61 of Braun et al. state:

> "It is very particularly preferred that a dynamic mask is provided for controlling the individual optical fibers. It is also particularly preferred that a set of static masks is provided for controlling the individual optical fibers."

The passage above is not specifically descriptive of aligning the optical fibers with areas of the substrate as the Examiner suggests. Rather, there is an ambiguous reference to controlling the optical fibers with the dynamic mask that Applicants assert refers to the control of the transmissive state of the fibers. This control of the transmissive state by the mask is described more clearly in col. 5, lines 35-47 of Braun et al. that state:

> "Another possibility for the targeted light coupling in the individual fibers of the optical fiber bundle is the use of

> automatically positioned static masks (e.g., photomasks or shadow masks) or an electronically controllable dynamic mask (e.g., an LCD), which is introduced between the light source and the input side of the fiber bundle. Any fiber inputs into which light will not be coupled at the respective exposure step can be masked in a targeted manner with the masks. The masks can be arranged geometrically in a different manner and particularly may be much larger than the array surface to be exposed, since the bundle of optical fibers can be fanned out or can be separated into individual fibers on the coupling side, as desired."

The passage above describes the mask as "introduced between the light source and the input side of the fiber bundle" for blocking light from entering the fiber elements (i.e. described as masking the coupling of light with the input side of the fibers by Braun et al.). Braun et al. does not describe a structure associated with the output side of the fibers for aligning the ends with areas of the substrate. Therefore, for the reasons described above Applicants respectfully assert that each of claims 1, 5, and 53 are patentable. Further, each of claims 2-4, 6-7, and 13 each depend from one of claims 1 or 5 in their chain of dependency and are thus patentable for the same reasons.

Reply to Claim Rejections – 35 U.S.C. §103

Claims 8-14 are rejected under 35 U.S.C. §103(a) over Braun et al. (WO 00/69553 and its English Translation counterpart US 6,819,843) in view of Adams et al. (US 6,156,494); claims 55-56 are rejected under 35 U.S.C. §103(a) over Braun et al. (WO 00/69553 and its English Translation counterpart US 6,819,843) in view of Oshida et al. (US 5,302,999); and claim 54 is rejected under

35 U.S.C. §103(a) over Braun et al. (WO 00/69553 and its English Translation counterpart US 6,819,843) in view of Schembri et al. (US 6,518,056).

As described above with respect to the rejections under 35 U.S.C. §102(a), Applicants respectfully assert that Braun et al. does not describe the limitations of "an output end of each optical fiber element is disposed in a well of an interface element that mechanically aligns the output end of the optical fiber element with an area for synthesizing a probe feature on the substrate". Further, Applicants also respectfully assert that nether Adams et al., Oshida et al., nor Schembri et al. describe the same limitations either alone or in combination with any other reference.

Therefore, Applicants respectfully assert that claims 8-14, and 54-56 are patentable, and respectfully request that the rejections be withdrawn.

CONCLUSION

In conclusion, Applicants respectfully assert that the references applied under 35 U.S.C. §102 or §103 do not describe or suggest the limitations of claims 1, 5, or 53 of an output end of each optical fiber element disposed in a well of an interface element that mechanically aligns the output end of the optical fiber element with an area for synthesizing a probe feature on the substrate. Therefore Applicants respectfully request that the rejections be withdrawn.

For these reasons, Applicants believe all pending claims are now in condition for allowance. If the Examiner has any questions pertaining to this application or feels that a telephone conference would in any way expedite the

prosecution of the application, please do not hesitate to call the undersigned at (781) 280-1522.

The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account 01-0431.

Applicants respectfully request that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

By _____

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